AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for displaying and manipulating data, the method comprising:

providing data items arranged in an n x m matrix, n equaling the number of columns in the matrix and m equaling the number of rows in the matrix, and wherein each column of the matrix relates to a characteristic described by the data items therein, wherein each said data item in the same column represents the same characteristic, although the values of said data items in the same column may differ from one another;

converting data values of said data items, using a visualization system, to graphical representations of said data values of said items to be displayed, wherein n x m graphical representations are provided that graphically represent the data values of the data items;

displaying c x d graphical representations of the data items in a c x d matrix on a display of the visualization system, where c is an integer equaling the number of rows in the c x d matrix, d is an integer equaling the number of columns in the c x d matrix, $c \leq n$ and $d \leq m$, with each graphical representation from the c x d representations occupying a corresponding cell in the c x d matrix displayed;

calculating a pseudo-data vector having n values, using a processor of the visualization system;

sorting and thus reordering the order of arrangement of the rows of data in the n x m matrix based on a comparison of the values of the pseudo-data vector with values of the data items, wherein each row of data items is converted to a data vector for comparison with said pseudo-data vector; and

displaying on the display of the visualization system d rows of the rearranged rows of data in the n x m matrix for observation by a user to provide the user with said d rows of data in said order of arrangement resulting from said sorting and thus reordering.

2. (Previously Presented) The method of claim 1, further comprising the steps of :

providing at least one row of annotative data comprising an annotative date item in at least one cell of said at least one row of annotative data, characterizing at least one of said data items in a j x m matrix adjacent said n x m matrix, wherein $j \geq 1$;

selecting a row from said at least one row of annotative data items; and

converting the selected row of annotative data items to said pseudo-data vector, by assigning data values to the annotative data items.

3. (Previously Presented) The method of claim 2, wherein said annotative data comprises binary data.

4. (Previously Presented) The method of claim 2, further comprising displaying said at least one row of annotative data adjacent the display of the first c x d graphical representations.

5. (Previously Presented) The method of claim 2, further comprising displaying said at least one row of annotative data adjacent the d number of rearranged rows.

6. (Previously Presented) The method of claim 2, further comprising color-coding cells of the at least one row of annotative data, said color-coding representing a function of the values of the annotative data in the cells.

7. (Previously Presented) The method of claim 3, further comprising color-coding cells of the at least one row of annotative data, said color-coding representing the binary values of binary data.

8. (Previously Presented) The method of claim 2, wherein said converting the selected row of annotative data to said pseudo-data vector comprises substituting pseudo-data values for the annotative data values contained in the cells of the selected row of annotative data.

9. (Previously Presented) The method of claim 8, wherein at least one cell of the selected row lacks an annotative data value, and wherein, upon said substituting pseudo-data values, said at least one cell lacking an annotative data value is assigned a predefined null value.

10. (Previously Presented) The method of claim 3, wherein said converting the selected row of annotative data to said pseudo-data vector comprises substituting predefined pseudo-data values for positive and negative annotative binary data values contained said binary data in the cells of the selected row of annotative data.

11. (Previously Presented) The method of claim 8, further comprising inverting the pseudo-data values that are used to substitute for the annotative data values.

12. (Previously Presented) The method of claim 1, wherein said sorting comprises similarity sorting the rows of the n x m matrix, wherein the rows are processed to determine a relative similarity value to the pseudo-data vector, and wherein upon reordering, all rows are repositioned in descending order from row one, based on ranking by the relative similarity values, and wherein d rows of the reordered m x n matrix are then displayed.

13. (Previously Presented) The method of claim 12, wherein a relative similarity value is determined by calculating a distance value between the pseudo-data vector and a vector generated from a row to be assigned the similarity value, wherein values corresponding to each cell of a pseudo-data row from which the pseudo-data vector was generated are compared with the respective cell values from the row that the vector was generated from.

14. (Previously Presented) The method of claim 13, wherein the distance value is determined by calculating a squared Euclidean distance between the two vectors.

15. (Withdrawn) The method of claim 13, wherein the distance value is determined by calculation of the Pearson correlation coefficient relative to the two vectors..

16. (Withdrawn) The method of claim 1, further comprising generating said pseudo-data vector from arbitrary data values.

17. (Previously Presented) The method of claim 1, further comprising generating said pseudo-data vector from values inputted by a user.

18. (Previously Presented) The method of claim 1, further comprising selecting at least a portion of a row in said n x m matrix; and

converting the row from which the at least a portion of a row was selected to said pseudo-data vector.

19. (Previously Presented) The method of claim 18, wherein said converting the row to said pseudo-data vector comprises substituting a predefined pseudo-data value for emphasizing each cell in said at least a portion of the row selected, to be emphasized during the sorting procedure, and substituting a value for de-emphasizing any cell in the row that was not selected, wherein said pseudo-data vector functions as a window or filter that emphasizes values in columns corresponding to said each selected cell, and de-emphasizes values in columns corresponding to any cell that was not selected.

20. (Previously Presented) The method of claim 19, wherein the predefined pseudo-data value for emphasizing is a positive value having been inputted by a user.

21. (Withdrawn) The method of claim 19, wherein said value for de-emphasizing is a null value.

22. (Previously Presented) The method of claim 19, wherein said value for de-emphasizing is a predefined negative pseudo-data value.

Claims 23-39. (Canceled)

40. (Currently Amended) The method of claim 1, further ~~A method~~ comprising forwarding a result obtained ~~from the method of claim 1~~ to a remote location.

41. (Currently Amended) The method of claim 1, further comprising transmitting data representing a result obtained ~~from the method of claim 1~~ to a remote location.

42. (Currently Amended) The method of claim 1, further comprising receiving a result obtained ~~from a method of claim 1~~ from a remote location.

43. (Currently Amended) A visualization system for displaying and manipulating data, comprising:

a display screen;

a processor; and

one or more sequences of instructions for displaying and manipulating data, wherein execution

of one or more sequences of instructions by said processor ~~one or more processors~~ causes the processor ~~one or more processors~~ to perform operations comprising:

providing data items arranged in an n x m matrix, n equaling the number of columns in the matrix and m equaling the number of rows in the matrix, and wherein each column of the matrix relates to a characteristic described by the data items therein, wherein each said data item in the same column represents the same characteristic, although the values of said data items in the same column may differ from one another;

converting data values of said data items, using said processor of said visualization system, to graphical representations of said data values of said items to be displayed, wherein n x m graphical representations are provided that graphically represent the data values of the data items;

causing c x d graphical representations of the data items in a c x d matrix to be displayed on said display screen of said visualization system, where c is an integer equaling the number of rows in the c x d matrix, d is an integer equaling the number of columns in the c x d matrix, $c \leq n$ and $d \leq m$, with each graphical representation from the c x d representations occupying a corresponding cell in the c x d matrix displayed;

calculating a pseudo-data vector having n values, using said processor;

sorting and thus reordering the order of arrangement of the rows of data in the n x m matrix based on a comparison of the values of the pseudo-data vector with values of the data items, wherein each row of data items is converted to a data vector for comparison with said pseudo-data vector; and

causing d rows of the reordered rows of data in the n x m matrix to be displayed on said display screen of said visualization system for observation by a user to provide the user with said d rows of data in said order of arrangement resulting from said sorting and thus reordering.

44. (Previously Presented) The system of claim 43, wherein execution of one or more sequences of instructions by said one or more processors causes the one or more processors to perform operations further comprising:

providing at least one row of annotative data items characterizing said data items in a j x m matrix adjacent said n x m matrix, wherein $j \geq 1$;

selecting a row from said at least one row of annotative data items; and

converting the selected row of annotative data items to said pseudo-data vector, by assigning data values to the annotative data items.

45. (Previously Presented) The system of claim 44, wherein execution of one or more sequences of instructions by said one or more processors causes the one or more processors to perform operations further comprising:

substituting pseudo-data values for the annotative data values contained in the cells of the selected row of annotative data.

46. (Previously Presented) The system of claim 45, wherein execution of one or more sequences of instructions by said one or more processors causes the one or more processors to perform operations further comprising:

inverting the pseudo-data values that are used to substitute for the annotative data values.

47. (Previously Presented) The system of claim 43, wherein execution of one or more sequences of instructions by said one or more processors causes the one or more processors to perform operations further comprising:

similarity sorting the rows of the n x m matrix, wherein the rows are processed to determine a relative similarity value to the pseudo-data vector, and wherein upon reordering, all rows are repositioned in descending order from row one, based on ranking by the relative similarity values, and wherein d rows of the reordered m x n matrix are then displayed.

48. (Withdrawn) The system of claim 43, further comprising means for generating said pseudo-data vector from arbitrary data values.

49. (Previously Presented) The system of claim 43, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations further comprising:

generating said pseudo-data vector from values inputted by a user.

50. (Previously Presented) The system of claim 43, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations further comprising:

selecting at least a portion of a row in said n x m matrix; and

converting the row from which the at least a portion of a row was selected to said pseudo-data vector, by assigning data values to any cells of a full row not having been selected or not having a value.

Claims 51-55. (Canceled)

56. (Currently Amended) A computer readable medium carrying one or more sequences of instructions for displaying and manipulating data, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations comprising:

providing data items arranged in an n x m matrix, n equaling the number of columns in the matrix and m equaling the number of rows in the matrix, and wherein each column of the matrix relates to a characteristic described by the data items therein, wherein each said data item in the same column represents the same characteristic, although the values of said data items in the same column may differ from one another;

converting data values of said data items, to graphical representations of said data values of said data items to be displayed, wherein n x m graphical representations are provided that graphically represent the data values of the data items;

displaying c x d graphical representations of the data items in a c x d matrix, where c is an integer equaling the number of rows in the c x d matrix, d is an integer equaling the number of columns in the c x d matrix, $c \leq n$ and $d \leq m$, with each graphical representation from the c x d representations occupying a corresponding cell in the c x d matrix displayed;

calculating a pseudo-data vector having n values;

sorting and thus reordering the order of arrangement of the rows of data in the n x m matrix based on a comparison of the values of the pseudo-data vector with values of the data items, wherein each row of data items is converted to a data vector for comparison with said pseudo-data vector; and

displaying d rows of the rearranged rows of data in the n x m matrix for observation by a user to provide the user with said d rows of data in said order of arrangement resulting from said sorting and thus reordering.

57. (Previously Presented) The computer readable medium of claim 56, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to

perform operations further comprising:

providing at least one row of annotative data items characterizing said data items in a j x m matrix adjacent said n x m matrix, wherein $j \geq 1$;

selecting a row from said at least one row of annotative data items; and

converting the selected row of annotative data items to said pseudo-data vector, by assigning data values to the annotative data items.

58. (Previously Presented) The computer readable medium of claim 56, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations further comprising:

inverting the pseudo-data values of said pseudo-data vector.

59. (Previously Presented) The computer readable medium of claim 56, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations further comprising:

generating said pseudo-data vector from values inputted by a user.

60. (Previously Presented) The computer readable medium of claim 56, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform operations further comprising:

selecting at least a portion of a row in said n x m matrix; and converting the row from which the at least a portion of a row was selected to said pseudo-data vector.

Claims 61-64. (Canceled)